

METHOD OF FABRICATING A TIERED STRUCTURE USING A  
MULTI-LAYERED RESIST STACK AND USE

5

Abstract of the Disclosure

An improved and novel method of forming a tiered structure, such as a T-gate structure, including the fabrication of a stabilized resist layer that provides for the prevention of interlayer intermixing with the deposition of subsequent resist layers. The method includes patterning a base resist layer to provide for an opening which will form the stem of the tiered structure and subsequently stabilizing the resist base layer without deforming the stem opening. Next, a resist stack is deposited on an uppermost surface of the stabilized resist layer. Patterning the resist stack provides for an opening on an uppermost layer or portion, and a reentrant profile in a portion of the resist stack adjacent the stabilized resist layer. Metallization and subsequent removal of the resist layers results in a tiered structure, such as a T-gate structure, formed using only low to medium molecular weight, linear polymeric materials such as those used in positive optical resists in optical lithography.